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TITLE: Reading control method for image processor - involves reading image with high resolution using second reading controller and that with low resolution using first reading controller

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BASIC-ABSTRACT:

The method involves reading an image with low resolution from the recording medium, by a first reading controller (S4). The same image is read with high resolution by the second reading controller (S22), for printing output.

The image information read by the first controller is displayed. The first reading controller performs reading by sequential scanning and the second reading controller reads by performing reverse direction scanning.

USE - In scanner.

ADVANTAGE - Performs image reading at high speed.

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EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.1/22

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] This invention relates to an image information processor and the reading control method.

[0002]

[Description of the Prior Art] In the conventional image processing system, the reading resolution of the image reader which reads the image which should be processed is usually one kind, read the processing image in one kind of this resolution decided beforehand, and was performing display or printing processing if needed.

[0003] This is because the resolution which usually carries out a printout differs from the resolution which carries out a display output in many cases.

[0004] In this case, when the resolution to output and the read resolution were not in agreement, infanticide/interpolation processing was performed and it was outputting according to output resolution.

[0005]

[Problem(s) to be Solved by the Invention] However, it was most to perform this resolution conversion at the time of a actual output, resolution conversion performed at the time of an output had to be performed on real time synchronizing with output timing, and the load was large.

[0006] Furthermore, although there were some which perform a PURISU can in order to investigate the concentration of an image, the magnitude for reading, etc. depending on the reader of an image in advance of reading of a actual image, it had not carried out reading the whole image at the time of a PURISU can.

[0007]

[Means for Solving the Problem] This invention was made for the purpose of solving a technical problem mentioned above, and aims at offering easy control, an image processing system which can be obtained promptly, and a reading control method for image data of a low resolution which was suitable for the display, and image data of high resolution suitable for printing. It has the following configurations as a way stage which attains this object.

[0008] That is, it is characterized by having a reading means to perform the 1st reading control which reads an image with a low resolution from a record medium, and 2nd reading control which reads the image more nearly same than said record medium with high resolution following said 1st reading control.

[0009] And while, using image information read by said 1st reading control as image information for a display for example, it is characterized by using image information read by said 2nd reading control as image information for printouts. Or it is characterized by considering 1st reading control as reading control by record-medium conveyance to the forward direction, and considering 2nd reading control as reading control by conveyance of a record medium to hard flow.

[0010] Moreover, it has a display means display the reading result by said 1st reading control, and a positioning means check a display with said display means and adjust the conveyance location at the time of reading of said record medium, and for example, said reading means is further characterized by to perform said 1st reading control again, without performing said 2nd reading control, when there is adjustment by said adjustment means.

[0011] Moreover, the 1st reading means which reads an image of a predetermined number in predetermined resolution from a record medium with which two or more images were recorded, A display means to display reading information on said 1st reading means, and a selection means to choose an image which checks a display with said display means and is made into a processing object, The 2nd reading means which reads an image chosen from said record medium with said selection means with high resolution, It is characterized by having an image maintenance means to hold an image chosen with said selection means of the low resolution pictures read with said 1st reading means, and a high resolution image read with said 2nd reading means as a processing-object image.

[0012] And for example, it is characterized by an image portion as which said 2nd reading means is not chosen scanning at reading speed of said 1st reading means, and same speed. Or while using said low resolution picture as image information for a display, it is characterized by using said high resolution image as image information for printouts.

[0013] Moreover, for example, the 1st reading means performs reading control by record-medium conveyance to the forward direction, and it is characterized by the 2nd reading means performing reading control by conveyance of a record medium to hard flow. Or when it has a positioning means to check a display with said display means and to adjust a conveyance location at the time of reading of said record medium and there is adjustment by said adjustment means, it is characterized by performing reading control by said 1st reading means again, without performing reading control by said 2nd reading means.

[0014] It is characterized by, further for example, using a record medium as either of the photographic paper in which a photography film with a camera, a silver salt-type film, an ADOBANSUDO photograph system (ADVANCED PHOTO SYSTEM) film, and a photograph were printed.

[0015] Moreover, for example, it is characterized by said 1st reading means reading a film per train, carrying out revolution processing of the reading information, and outputting it per line, and for said 2nd reading means carrying out compression processing, and outputting reading information.

[0016]

[Embodiment of the Invention] Hereafter, the example of a gestalt of implementation of 1 invention concerning this invention is explained to details with reference to a drawing.

[0017] Drawing 1 is drawing showing the system configuration of the image processing system in the example of a gestalt of implementation of 1 invention concerning this invention, and explains the outline of the example of a gestalt of operation of this invention with reference to drawing 1 first.

[0018] In drawing 1, the scanner equipment with which 1 reads an image from image recording data medium by which the color of a negative or a positive and the analog image of monochrome were recorded, and 1000 are scanner equipment 1 and server equipment which processes the input image from the picture input device 5000 which inputs a digital image, and is outputted to a display 1800 and printer equipment 3000, and a maximum of five sets of terminal units can connect them to server equipment through communication media.

[0019] 2000 is a terminal unit which is connected to server equipment 1000, performs the image processing to the image saved in server equipment, and carries out a printout from printer equipment 3000. Moreover, the template work equipment which generates / changes the template data which is an output format at the time of the printout to the printer equipment 3000 which 4000 mentions later, and 5000 are picture input devices which read the digital image from image recording data medium by which digital storage was carried out. In addition, this template is equivalent to the pasteboard of an album. The color is taking lessons from the whole at the template, or the picture and the design are given to the background.

[0020] The image control section which 1100 reads the image information which should be processed and is held in server equipment 1000, the image-processing section which 1200 performs various kinds of processings to the image information which the image control section 1100 holds, and is outputted to the image control section 1100 and printing control-section 1500 grade, and 1300 are template control sections which carry out maintenance control of various kinds of templates made with template work equipment 4000 etc.

[0021] Moreover, the control section in which 1400 manages control of the whole equipment, and 1500 are printing control sections which manage control of printer equipment 3000.

[0022] The image control section 1100 controls image reading by scanner equipment 1. A reading analog image is changed into a corresponding digital image. While storing the image inputted in the image input section 1120 which inputs the digital image from the reading image data and picture input device 5000 from the scanner control section 1110 and the scanner control section 1110 to output, and the image input section 1120 in the image pool 1150 It is constituted by the image pool 1150 grade holding the image subsystem 1130 which controls delivery with the image-processing section 1200 of the image stored in the image pool 1150, and a display 1800, and the image data which should be processed.

[0023] The image-processing section 1200 is constituted by the service processing section 1230 grade which performs predetermined service processing of a large stretch, panorama composition, etc. to the image amendment section 1220 which performs various amendment processings, such as bloodshot-eyes clearance to the image edited in the image editorial department 1210 which receives a processing image and edits an image from an image control section, and the image editorial department 1210, and a processing image.

[0024] While a designer etc. incorporates on-line various kinds of templates made beforehand through record media, such as direct or CDROM, using the external device of template work equipment 4000 grade, the template control section 1300 It carries out combining the various templates which held the incorporated various templates to the external device of template work equipment 4000 grade by the template attaching part 1310 in which an output is possible, and the template attaching part 1310, and the image stored in the image pool 1150 etc. The book subsystem 1350 which manages template-related control of outputting to the image subsystem 1130 is contained.

[0025] In addition, the photograph which forms the book which book format packed by the set of a template, a background, etc., the clip art which chooses as arbitration and is clipped, the photograph border, etc. are stored in this template attaching part 1310 as a template.

[0026] Moreover, the service manager 1420 who mainly controls the system manager 1410 who manages system-wide control, the service processing section 1230, the image input section, etc., the order manager 1430 who manages an order customer] (order), the print queue manager 1450 who manages print queue control of the printing control section 1500, and the terminal manager 1480 which manages various control with a terminal unit including a log in/log out with each terminal unit 2000 are contained in the control section 1400.

[0027] In the terminal unit 2000, it has the image subsystem 2130 of a configuration, the book subsystem 1350, and the same book subsystem 2350 as well as the image-processing section 2200 of a configuration, and the image subsystem 1130 like the image-processing section 1200 of server equipment 1000. However, since it does not have the image pool 1150, the template attaching part 1310, and the printing control section 1500, a terminal unit 2000 performs access to these to the image pool 1150 of direct server equipment 1000, the template attaching part 1310, and the printing control section 1500.

[0028] Therefore, only the parameter as information with which server equipment 2000 was coded about handling and printing only in display image data as image data communicates.

[0029] In addition, in the example of a gestalt of operation of this invention, as a processing image, two kinds of image data, the image data (Fine image) of the high resolution for printouts and the image data (Poxyimage) of the low resolution for a display output, is incorporated, and it stores in the image pool 1150. Consequently, the processing control of an image and the interval which are mentioned later also make the difference of the image quality of a display and a printout the minimum, and the traffic of the image information between a terminal unit 2000 and server equipment 1000 is stopped few. in addition, after perform 90 revolution processings so that it may output per line at the time of the output to the image pool 1150 in be the data read per train in the image input section 1120 by the CCD sensor of the scanner equipment 1 which low resolution data mention later, it be output, and high resolution data carry out JPEG compression, and be store in the image pool 1150 by use compressed data as high resolution data. And after carrying out JPEG expanding at the time of the output from the image pool 1150, various kinds of image processings are performed. This has mitigated the monopoly capacity in the image pool 1150.

[0030] The details configuration of the scanner equipment 1 of the example of a gestalt of operation of this invention equipped with the above configuration is explained below with reference to drawing 2 thru/or drawing 18.

[0031] Drawing 2 is the appearance perspective diagram of the example of an operation gestalt of this invention, and shows the whole system configuration containing server equipment 1000.

[0032] In this Fig., scanner equipment 1 is briefly explained with reference to the whole system block diagram of drawing 2 about the typical operation, although there is how to use versatility.

[0033] the photo electric translation this scanner equipment 1 contains the line image sensors of high resolution with built-in (b), performing horizontal scanning and vertical scanning of image-recording data medium on which the color of the (a) negative or a positive and the analog image of monochrome were recorded -- the analog-to-digital photo electric translation of an analog image -- carrying out -- (c) -- the processing which transmits the digital signal acquired by this photo electric translation to the scanner control section 1110 of server equipment 1000 through interface cables, such as SCSI, and is stored in the image pool 1150 performs

[0034] The format of image recording data medium of there being the above fundamental activity gestalten and having the analog image [handling / an analog image / this scanner equipment 1] is divided roughly, and is the following four kinds.

[0035] First, there are the negative and BOJIFIRUMUFIRUMU (F) which are used for the silver salt type camera which has spread widely now now as 1st image recording data medium. This film, for example, 135 films [finishing / the development taken 36 sheets], is divided into a part for six pieces, and they are cut to the same length, and after being contained by the NEGASHITO case, they are passed to a user.

[0036] in addition, as for scanner equipment 1, it continued before cutting developed negatives -- 36 sheets are photographed, and also about 135 films, the device top at least is considered so that it can be dealt with.

[0037] On the other hand, as 2nd image recording data medium, in order to mainly make it usable with a projector, a BOJI (reversible) film [finishing / development] is cut for every piece, and there is a film containing a slide mounter (MF) contained by the slide mounter.

[0038] Moreover, there is a reflection copy G which is the photographic paper and the various prints with which the color or the film photo of MOROKURO was able to be burned as 3rd image recording data medium, and recorded the analog image on the front face and by which reflective reading is carried out, for example, there is a manuscript G which inserts a photographic panorama in the direction of an arrow head at a longitudinal direction, and was made to perform read.

[0039] And there is an APS (ADVANCEDPHOTO SYSTEM) film (CF) which is a new rank film as 4th image recording data medium. It provides for a user in the so-called index print which contained [in / contain in the case which winds around the built-in spool the film which will be filmed 36 sheets if it explains briefly, although this APS film CF is a well-known thing, and intercepted outdoor daylight, and / the lab shop] the film in the state of winding in the case again after development request processing after camera photography, and printed all photography pieces in the index number. Therefore, in order to acquire a desired photograph, a user specifies the index number of a desired piece photograph.

[0040] Handling [data medium / of explanation / the 1st to 4th / image recording / this scanner equipment 1] above altogether. With reference to drawing 2, an approximate account is carried out to below about the operating procedure of each image recording data medium.

[0041] First, in order to deal with the film F containing 135 films which are 1st image recording data medium, the continuation film unit 100 is used. This continuation film unit 100 is automatically constituted possible [loading] to scanner equipment 1.

[0042] For this reason, the unit 100 is formed in the direction of an arrow head possible [insertion] from the right opening 13 of the dashed line graphic display prepared so that a opening might be carried out to right and left like a graphic display in front section 1a of scanner equipment 1. If there is a continuation film unit 100 by the optical sensor which serves as detection of the bar code read which is the sensor k3 arranged near the right opening 13 of equipment 1, and is formed in the vertical edge of a film and a condition is detected Auto-boot of the 2nd motor m2 which built-in mentions later in response to this detection result is performed, it is conveyed until the insertion edge of a unit 100 is located in the left opening 14 shown as a continuous line, and it is constituted so that it may stop automatically in the left opening 14.

[0043] By setting manually the negative or positive film F with which the amount of six pieces continue to a unit 100 in the direction of an arrow head in drawing, after loading equipment 1 with this continuation film unit 100 Performing horizontal scanning and vertical scanning of image recording data medium on which the scan of the 1st of the film F which mentions details later first was performed, Film F was conveyed in the positive direction, and the analog image was recorded The analog image in a low resolution is read by the photo electric translation containing the line image sensors of the built-in high resolution, a film is rewound after that, and image ***** in high resolution is performed by the same procedure. Therefore, this continuation film unit 100 is indispensable.

[0044] Moreover, in order to deal with the film MF containing a slide mounter contained by the slide mounter which is 2nd image recording data medium, the slide film unit 200 is newly used, after removing the above-mentioned continuation film unit 100 from equipment 1.

[0045] This slide film unit 200 is constituted possible [receipt] so that the film MF containing a slide mounter for six pieces may be set from upside opening and it may stop at a predetermined location, respectively, that overall length is a little longer than the continuation film [finishing / development] F for six pieces, and the width-of-face size of the cross direction of the slide film unit 200 is set as about 5mm.

[0046] On the other hand, since the width-of-face size of the film F with which the above continues is around 0.15mm, the function for conveyance mentioned later is needed for both sides.

[0047] This slide film unit 200 as well as the above-mentioned continuation film unit 100 It is prepared in the direction of an arrow head possible [insertion] from the right opening 13 of the dashed line graphic display prepared so that it could load automatically to scanner equipment 1, for this reason a opening might be carried out to right and left like a graphic display in front section 1a of scanner equipment 1. If a condition with slide film unit 200 is detected by the optical sensor arranged near the right opening 13 of equipment 1, auto-boot of a built-in motor will be performed in response to this detection result.

[0048] Consequently, as a slide unit 200 is suitably conveyed the left-hand side in drawing through the left opening 14 shown as the continuous line in drawing, the scan of the mounting film MF of entering a slide mounter for six pieces is performed, the mounting film MF is conveyed in the positive direction, a PURISU can is performed, and the photo electric translation which performs vertical scanning and contains the line image sensors of high resolution with (b) built-in

above-mentioned] performs reading and photo electric translation in the low resolution of an analog image. As it conveys to hard flow after that, the Maine scan is performed and vertical scanning is performed, the photo electric translation containing line image sensors with (b) built-in [above-mentioned] performs reading and photo electric translation in the high resolution of an analog image.

[0049] In addition, since the distance from the image read side on the line image sensors mentioned later differs, respectively, the image currently formed on the emulsion side of the film F with which the continuation film unit 100 is loaded, and which is conveyed, and the image currently formed on the emulsion side of the mounting film MF set to a slide unit 200 are equipped with the automatic-focusing device in the condenser lens. For this reason, in each of Film F and the mounting film MF, the front reverse side, on the contrary even when it sets, the exact focus to an image is attained. In this case, it reads in the image input section 1120, and after carrying out the reversal process of the image and returning it to a normal image, it will be stored in the image subsystem 1130 delivery and after that to the image pool 1150.

[0050] Moreover, there is a quite oblong thing in the reflective reading manuscript G which is 3rd image recording data medium like a photographic panorama. Such a manuscript G and the manuscript G of the so-called usual service version size are constituted so that automatic attraction may be carried out and read of a manuscript may be performed by inserting in the direction of an arrow head through the manuscript insertion exhaust port 8 arranged in the lower part part of front 1a of equipment 1 like a graphic display. And it is discharged outside from the manuscript insertion exhaust port 8 same after reading actuation.

[0051] Therefore, the dimension in alignment with the cross direction of equipment 1 will be determined in consideration of the size in alignment with the longitudinal direction of a photographic panorama. the manuscript width-of-face baffle plate 9 which regulates Manuscript G crosswise to this manuscript insertion exhaust port 8 -- it is -- as everyone knows -- while -- or -- or it separates from a center position by moving both sides manually -- a long distance -- the manuscript width-of-face baffle plate 9 equipped with the device is formed.

[0052] And the APS film CF which is 4th image recording data medium is set in the direction of an arrow head to the applied part 11 for APS films which adjoins the left opening 14 of front 1a of equipment 1, and is arranged so that it may be illustrated by the dashed line in drawing. For this reason, the opening 11 for making an applied part 11 ahead movable is formed in equipment 1, and after moving ahead like the after-mentioned, it is constituted possible [receipt of the cartridge of the APS film CF] through the wearing hole 12 formed on the upper surface of an applied part 11.

[0053] Next, it is the indicator 7 for power turning on and off which displays the on-off condition of equipment 1, and the indicator 7 which consists of light emitting diode always turned on according to the ON state of the main power supply switch arranged in 1d of backs and Sides 1b and 1c of equipment 1 is formed in the part which does not become obstructive when it is the upper part part of **** of front 1a of equipment 1 and loads with each above-mentioned unit 100,200.

[0054] moreover, to front 1between above-mentioned right-and-left opening 13 and 14 a The drop 15 which displays the condition of an APS film of operation in an order from left-hand side, The drop 16 which displays the condition containing 135 films of the usual film F and the mounting film MF of operation, The drop 17 which displays the condition of Manuscript G of operation is arranged, respectively, the standby condition in each mode used is displayed by regular burning of green, and normal actuation is displayed by green flash, and it is constituted so that the abnormal conditions, such as defects of operation, such as jamming generating, may be indicated by flash in red.

[0055] The ejection switch 6 pressed in order to move the applied part 11 of the above-mentioned APS film CF to the lower part part of these drops 15, 16, and 17 ahead of equipment 1 from a opening 11 is arranged.

[0056] Drawing 3 is the appearance perspective diagram of scanner equipment 1, ends manuscript read and shows the situation after pressing an ejection switch 6.

[0057] If it limits and states to a part for a non-recital, when an ejection switch 6 will be pressed, the below-mentioned applied part migration device starts, and it is moved ahead of arrow head D1 direction through the opening 11 of the front face of equipment 1, and is made give the same sign to a configuration of finishing [explanation] already, omit explanation, and for the applied part 11 of the APS film CF to plug up the left opening 14 in this Fig. Therefore, in this condition, receiving other data medium at least visually can be avoided.

[0058] The lid 19 prepared in the state of this graphic display so that the opening 10 of equipment 1 might be intercepted thoroughly optically rotates in the direction of an arrow head, and to the wearing hole 12 of an applied part 11, as the film output port CFa of the APS film CF goes, it can equip an equipment side. Since the film loading of the camera of APS film specification is resembled, this can be operated rightly.

[0059] Thus, if set in the wearing hole 12, those with APS film CF will be detected by the microswitch of built-in in an applied part 11, an applied part migration device operates by this detection, an applied part 11 is moved to an arrow head D 2-way, and a lid 19 is closed simultaneously.

[0060] It considers carrying out specification of the outer-diameter size of the equipment 1 specified from the width-of-face size W, the depth size Y, and the height size H of a graphic display, where the flatbed-type scanner equipment for the manuscripts of for example, A4 size is laid. For this reason, where flatbed-type scanner equipment is laid, when using, it enables it to perform altogether each loading actuation of each above-mentioned data medium from the front 1a side of equipment 1. Moreover, when it loads, it is considered so that the whole height size H may become small.

[0061] A paraphrase sets up each conveyance system and optical system which are mentioned later from such a situation.

[0062] In addition, according to the example of an operation gestalt of this invention, on the relation for the man of the dextrism who occupies most, although he is trying to equip with each unit from right-hand side, it cannot be overemphasized that it can set up for left-handed men suitably.

[0063] Then, the appearance perspective diagram and drawing 4 (b) which showed the condition that drawing 4 (a) equipped equipment 1 with the continuation film unit 100 are the appearance perspective diagram showing the condition of having equipped equipment 1 with the slide film unit 200.

[0064] First, if it is equipped with the continuation film unit 100 through the right opening 13 of a dashed line graphic display of equipment 1 in drawing 4 (a) and is automatically moved to a predetermined location, it will be in a condition like a graphic display. Then, an operator grasps so that an image side cannot be soon touched by hand like a graphic display of the predetermined film F containing 135 films, and he sets to the insertion section of the continuation film unit 100. Then,

vertical scanning is performed, Film F being conveyed from the left opening 14 to positive hard flow (the direction of arrow head D).

[0065] moreover, if the slide film unit 200 with which the mounting film MF for six pieces was beforehand set at the maximum in drawing 4 (b) is alike and it is equipped with it through the right opening 13 of a dashed line graphic display of equipment 1, it will be in a condition like a graphic display, and vertical scanning will be performed by conveyance be performed to positive hard flow (the direction of arrow head D) so that a part may come out from the left opening 14.

[0066] With constituting as mentioned above, it is effective in the ability to avoid treating the APS film CF newly at least visually with these conditions.

[0067] Drawing 5 is the appearance perspective diagram showing the device of equipment 1, gives the same sign to a configuration of finishing [explanation] already by drawing 2 , and omits and describes explanation.

[0068] First, the configuration of the read station 20 of the manuscript G shown with a dashed line is as follows. While being constituted so that power may be obtained from the 1st motor m1 which consists of a stepping motor etc. The drive roller 21 which used the rubber of an urethane system in elastic section 21a of the right and left which touch a manuscript side soon, and fixed elastic section 21a to axis 21b, respectively, The roller pair of the couple which consists of an idler 22 which follows and rotates in rotation actuation of a drive roller 21 while always contacting by the predetermined pressure to this drive roller 21 is prepared. In the downstream, the same roller pair is arranged further, and two-set distribution are arranged in a non-illustrated base.

[0069] Between these roller pairs, two cold cathode tubes 23 which can obtain high brightness are being fixed to the base (un-illustrating) at a low temperature, and it is constituted so that the manuscript side of Manuscript G may be irradiated.

[0070] The reflective mirror 24 equipped with reflector 24a for the cross direction of Manuscript G is being fixed to the upper part part of two cold cathode tubes 23 with the inclination of 45 degrees to the manuscript side to the base (un-illustrating) like a graphic display. It is constituted so that it may point to the optical axis L1 from the manuscript side across which it faces with two cold cathode tubes 23 in a condenser lens 25, and as it condenses in the line image CCD section 26 of the predetermined resolution fixed to a base, it is constituted so that horizontal scanning of a manuscript side may be performed.

[0071] In addition, these are contained by the non-illustrated black box and are intercepting outdoor daylight. Moreover, it always acts as the monitor of the conveyance condition of Manuscript G by the optical sensor K1 and optical sensor K2 which consist of luminescence light-receiving diode arranged in the location of a graphic display, and it makes existence of a manuscript, and termination of reading actuation detectable.

[0072] Next, the configuration of the read station 30 of the common 135 films F is as follows. The 2nd motor m2 driven according to the number of driving pulses which revolution actuation was possible to positive hard flow, and was set as it like a stepping motor is being fixed to the non-illustrated base, and through the power transmission device shown as the continuous line in drawing to this 2nd motor m2, it is constituted so that the 1st four drive roller 32 may be rotated possible right reverse] in total like a graphic display.

[0073] Each 1st drive roller 32 has prepared elastic section 32a which used the rubber of an urethane system for the location which touches soon to the bar code recording surface of the vertical part of each piece of Film F in couple part axis 32b up and down.

[0074] Moreover, as it changes an idle roller 33 into rotation freedom and an energization condition and it maintains gaps fewer than about 5mm which are the width of face of the above-mentioned slide film unit 200 in the location which counters each of the 1st drive roller 32 prepared in this way, it is arranged in it free [rotation] in the base 31.

[0075] As the cold cathode tube 34 is formed on the other hand between the 1st drive roller 32 located in the center, it points to the image of Film F in a condenser lens 44 and it condenses in the line image CCD section 46 of the predetermined resolution fixed to a base, it is constituted so that horizontal scanning and vertical scanning of Film F and the mounting film MF may be performed. In addition, these are contained by the black box mentioned later and outdoor daylight is intercepted.

[0076] Moreover, as the optical-path translator 40 which formed the reflective mirror 48 is formed by the 4th motor m4 between the opticals axis L3 of the alternate long and short dash line graphic display in drawing which ties a condenser lens 44 and a cold cathode tube 34 so that it may rotate by 45 abbreviation, and it rotates in the location of a continuous line graphic display, and the location of a dashed line graphic display, it is constituted so that it may change into the condition that the condition of interrupting an optical axis 3, and an optical axis L3 direct in a condenser lens 44.

[0077] Furthermore, between this optical-path translator 40 and a condenser lens 44, it is prepared so that the filter translator 41 equipped with two or more filters 42 may rotate by the 5th motor m5, and according to the negative of Film F, a positive, and the Orange base of the film of various specification, it is constituted so that the optimal filter 42 may intervene between opticals axis L3 suitably.

[0078] Next, the read station of the APS film CF which is 4th image recording data medium is constituted as follows.

[0079] The sensor K4 which consists of a microswitch is arranged in the base of the wearing hole 12 of the above-mentioned applied part 11 equipped with the APS film CF. Moreover, it is the dowel member 61 of a dashed line graphic display, and the member constituted so that it may engage with the film take-up spool of the APS film CF is prepared in the base of the wearing hole 12 free [rotation], and in the location of a continuous line graphic display, it is constituted so that this dowel member 61 may gear through the epicyclic gear device in which it does not illustrate, to the 7th motor m7.

[0080] Moreover, the rack 62 is installed in the applied part 11 like a graphic display, and it is constituted so that an applied part 11 may be driven through the opening 10 of above equipment 1 with actuation of the positive hard flow of the 8th motor m8 which formed the pinion 63 which always gears to this rack 62 in the output shaft in the location of the continuous line graphic display in drawing, and a dashed line graphic display.

[0081] The cold cathode tube 64 is arranged in the downstream of the film output port CFa of the APS film CF in the condition of having equipped this applied part 11. The optical axis L2 (alternate long and short dash line graphic display) which connects the above-mentioned optical-path translator 40 to this is in the condition which the optical-path translator 40 rotated by 45 abbreviation, and rotated in the location of a dashed line graphic display. As it directs in the above-mentioned condenser lens 44, it is constituted so that the line image CCD section 46 of predetermined resolution may be shared with the above-mentioned film F and the object for MF.

[0082] It is prepared in the pan of this cold cathode tube 64 so that the capstan roller 68 which has the elastic body material of a urethane rubber system in an actuator may obtain power from the 9th motor 9 directly to the downstream. It is made to counter this capstan roller 68. The APS film CF sent out by actuation of the 7th above-mentioned motor m7 from the film output port CFa of the APS film CF between the idle rollers 67 prepared in the state of contact is pinched. It is constituted so that read actuation which performs horizontal scanning and vertical scanning as passes a cold cathode tube 64 with constant speed may be performed.

[0083] The take-up spool 66 which obtained power from the 9th above-mentioned motor m9 through the clutch 65 is arranged in the downstream by the pan of these capstan rollers 68 and idle R-RA 67, and he is trying to once roll round the APS film CF after reading altogether by this take-up spool 66.

[0084] Generating a moderate back tension on the APS film CF after the above read actuation termination, as the energization to the 9th motor m9 is cut and the free condition by the day TENDO torque of a motor is maintained, by actuation of the 7th motor m7, it rotates by the dowel member 61 and the spool within the case of the APS film CF is contained altogether. Then, it discharges outside from opening 10.

[0085] Thus, in the APS film CF of a configuration of rolling round by the spool contained by the cartridge, breakage to a film can be carried out now to whenever [minimum] at the time of jamming generating of a film by moving an applied part 11 so that it may meet in the direction of film drawing as mentioned above.

[0086] If the drop 15 shown in drawing 2 specifically becomes red, it is interrupted, the top plate of scanner equipment 1 is broken, and a film can be sent in in a case from the upper part.

[0087] Drawing 6 is explanatory drawing of each read station of drawing 5 of operation. In this Fig., the same sign is given to a configuration of finishing [explanation] already, and explanation is omitted.

[0088] First, if Manuscript G is inserted in a read station 20, a manuscript head will be detected by the sensor K1, the 1st motor m1 will start, and it rotates to the circumference of an anti-clock, and the strike of the manuscript is carried out to two cold cathode tubes 23, and as a drive roller 21 points to an optical axis L1 in a condenser lens 25 by the reflective mirror 24 equipped with reflector 24a for the cross direction of Manuscript G, it will perform read by CCD26. At this time, since a drive roller 21 is rubber of an urethane system, and is using the weak construction material of adhesion for the location which touches a manuscript side soon in the comparison with silicone rubber and it can maintain an always clean condition, it can prevent the dirt of a user's important manuscript. After this read is completed, reverse actuation is carried out and the 1st motor 1 is discharged.

[0089] Next, it is set to the continuation film unit 100, and if wearing initiation is detected by the sensor K3 after the mounting film MF is set to the slide film unit 200, the 2nd motor m2 will be started, and the common film F rotates the 1st four drive roller 32, and performs predetermined read actuation.

[0090] At this time, since each 1st drive roller 32 has prepared elastic section 32a which used the rubber of an urethane system for the location which touches soon to the bar code recording surface of the vertical part of each piece of Film F in couple part axis 32b up and down, it can prevent dirt.

[0091] Next, if an applied part 11 is moved to the location of a continuous line graphic display in actuation of the 8th motor 8, the 7th motor 7 will be started, and read actuation of the APS film CF which is 4th image recording data medium will pass the cold cathode tube 64 of the downstream of the film output port CFa of the APS film CF, and will send the film of the APS film CF between a capstan roller 68 and an idle roller 67. Then, the 9th motor m9 is started, a capstan roller 68 and an idle roller 67 are driven, and read is performed, rolling all round by the take-up spool 66. Generating a moderate back tension on the APS film CF after the above read actuation termination, as the energization to the 9th motor m9 is cut and the free condition by the day TENDO torque of a motor is maintained, by actuation of the 7th motor m7, it rotates by the dowel member 61 and the spool within the case of the APS film CF is contained altogether. Then, it discharges outside from opening 10.

[0092] As mentioned above, next, the slide film unit 200 It is constituted possible [receipt] so that the film MF containing a slide mounter for six pieces may be set from upside opening and it may stop at a predetermined location. Since the overall length is a little longer than the continuation film [finishing / development] F for six pieces, and the width-of-face size of the cross direction of the slide film unit 200 is about 5mm and the width-of-face size of the continuation film F is around 0.15mm the space of a drive roller 32 and an idle roller 33 -- 5mm or more -- it is necessary to carry out -- in addition -- and the both sides of each unit 100,200 are described about the device made usable with reference to the important section cross section of drawing 7, and the important section cross section of drawing 8. In addition, the same sign is given to a configuration of finishing [explanation] already, and explanation is omitted.

[0093] First, in drawing 7, the lens 45 is built in the condenser lens 44 in the camera cone, it is constituted so that opticals axis L2 and L3 may be condensed to CCD46, and the screw member 47 is being further fixed to this camera cone. This screw member 47 is screwed in the endless screw 43 currently fixed to the output shaft of the 6th motor 6 currently fixed to the base which is not illustrated. The automatic-focusing device is established by the above configuration. Moreover, the opening which introduces an optical axis L2 into a black box 36 is formed in the location of a graphic display.

[0094] Moreover, when the continuation film unit 100 is set to a black box 36, the crevice 50 for the engagement for making it immobilite like the after-mentioned is formed. Each idle roller 33 is formed in the state of the energization which moves to a drive roller 32 side with a spring 51, and it consists of conditions of having been loaded with the continuation film unit 100 like a graphic display so that it may contact and rotate to the free roller 52.

[0095] On the other hand, a sensor K3, K5, and K6 and K7 are arranged in the location of a graphic display, and they are made to act as the monitor of each operating state. Moreover, the aperture 38 which counters a cathode-ray tube 34 is formed in the center section.

[0096] Next, it is equipped with the slide film unit 200 in drawing 8, and signs that it is conveyed in the direction of arrow head D are shown, and it will be conveyed, being pinched between an idle roller 33 and a drive roller 32 in this case. That is, since the width-of-face size t of a unit 200 is about 5mm, it can convey as it is.

[0097] Based on the front view of drawing 9, and the important section cross section of drawing 10, it explains about the configuration of the continuation film unit 100.

[0098] While the continuation film unit 100 forms the base 55 which has the film strike side 56 which projected a little, and

the aperture 74 which passes the light source from a cathode-ray tube in drawing 9, the inner package of the eight-piece rotation of the above-mentioned free roller 52 is made free in total. Moreover, the inner package of the rotation also of the free roller 53 is made free.

[0099] Next, further, it is prepared so that a lever 58 may be movable to a longitudinal direction in a base 55 and a board 77 may be made in one with reference to drawing 11. If it is acting on that rotation is free and operation edge 80a of a member 80 energized with the torsion spring 79 at the circumference of an anti-clock, a unit 100 is inserted in the circumference of a pin 78 from the right opening 13 side of drawing 2 and it is moved to a predetermined loading location, edge 77a of this board 77 is constituted so that a member 80 may carry out drop engagement like the graphic display at drawing 10 to a crevice 50.

[0100] In order to cancel this engagement condition, it can cancel by operating it so that a lever 58 may be moved rightward, and taking out a member 80 outside from a crevice 50.

[0101] Drawing 12 is a plan explaining the configuration of a drive roller 32 and an idle roller 33, drawing 13 is A-A view drawing of drawing 12, and drawing 14 is B-B view drawing of drawing 12. In drawing 12 and drawing 14, the drive roller 32 is supported to revolve respectively free [rotation] in the base 90, and is fixing the gear 94 to an axis end, respectively. Moreover, as partial 32a of an elastic body is made into the outside surface of each unit as it comes out outside from the window part currently drilled in the base 90, respectively and a window part follows the height 91 to which it shows each unit 100,200, and it contacts, the transfer of the conveyance force of it is enabled.

[0102] He is trying for a part to come out of the above-mentioned idle roller 33 outside from the window part 71 of a base 70 in drawing 13 on the other hand.

[0103] Moreover, drawing 15 is the front view seen outside from the interior of equipment 1, and the spring 51 is acting on each idle roller 33 like a graphic display, and it is prepared in the location where each idle roller 33 contacts to the strike side of the slide film unit 200. Moreover, drawing 16 and drawing 17 show signs that it was started after wearing of the above-mentioned continuation film unit 100, and in this Fig., they are the location of the sprocket hole for delivery of Film F, and they are constituted so that elastic section 32a of each drive roller may be located to the formation portion of a bar code BC.

[0104] Moreover, like the graphic display to drawing 17, it is arranged as sensor K3-1 and sensor K3-2 up and down, respectively, and even if a sensor K3 is a case whose read becomes possible about the up-and-down bar code BC where reversed top and bottom and it is set to a unit 100, it makes detectable the upper and lower sides of Film F.

[0105] (e) is explanatory drawing of operation showing the strike condition of Film F from drawing 18 (a), and it sets to (a) and (b). The reserve preliminary scan of Film F is performed, and the scan for one line of the lengthwise direction like the abbreviation center section of the first piece is performed, read the maximum and the minimum value of contrast in this data, and the above-mentioned automatic-focusing device and exchange of a filter are operated. SETTENGU of the focus of a condenser lens and a desired filter is performed, in (c), it returns to hard flow once, and prepares for a preliminary scan, and this scan is performed, conveying all to hard flow in delivery and (e) in (d).

[0106] [The configuration of a control circuit], next the control circuit of scanner equipment 1 mentioned above are explained. Drawing 19 is the block diagram showing the configuration of the control circuit of scanner equipment.

[0107] In drawing 19, CPU323 is a controller which manages control of the whole scanner equipment. The interface (I/F) circuit 322 is enabling transmission and reception of image data and various control data between the scanner control sections 1110 of the server equipment 1000 connected by the I/F cable. The program memory which stores the control program with which CPU323 performs ROM320, and RAM321 are the memory of the dynamic mold which saves various data (various control data, image data, etc.).

[0108] As shown also in drawing 5, the ejection switch 6 serves as the open/close switch of an applied part 11, other films, or the forced discharge switch of a manuscript, and the ON/OFF signal is outputted to CPU323. The 2nd motorised circuit 300 controls the 2nd motor m2 for scanning the 135 films F based on the control data of CPU323. The 7th motorised circuit 301 controls the 7th motor m7 for containing the APS film CF inside a case based on the control data of CPU323. The 9th motorised circuit 302 controls the 9th motor m9 for sending out and scanning the APS film CF from the interior of a case based on the control data of CPU323. The 1st motorised circuit 303 controls the 1st motor m1 for scanning Manuscript G based on the control data of CPU323. The 8th motorised circuit 304 controls the 8th motor m8 for taking an applied part 11 based on the control data of CPU323.

[0109] The bar code combination sensor input circuit 305 outputs the detection signal of the bar code combination sensor K3 to CPU323. CF existence sensor input circuit 306 outputs the detection signal of CF existence sensor K4 to CPU323. The manuscript entrance sensor input circuit 307 outputs the detection signal of the manuscript entrance sensor K1 to CPU323. The continuation film unit sensor input circuit 308 outputs the detection signal of the position sensors K6 and K7 which detect delivery of 135 films to CPU323. The manuscript existence sensor input circuit 309 outputs the detection signal of the manuscript existence sensor K2 to CPU323. And the sensor input circuit 310 outputs the detection signal of end sensor K5 which detects the edge at the time of wearing of the continuation film unit 100 to CPU323.

[0110] The 135 film lighting actuation circuit 311 carries out burning control of the cold cathode tube 34 which irradiates light at the 135 films F based on the control data of CPU323. The APS film lighting actuation circuit 312 carries out burning control of the cold cathode tube 64 which irradiates light at the APS film CF based on the control data of CPU323. The manuscript lighting actuation circuit 313 carries out burning control of the cold cathode tube 23 which irradiates light at Manuscript G based on the control data of CPU323.

[0111] The 135-/APS film pickup circuit 314 carries out actuation control of the line image CCD 46 which changes 135 film images and an APS film image into an electrical signal, and picturizes them based on the control data of CPU323. The manuscript image pick-up circuit 315 carries out actuation control of the line image CCD 26 which changes a manuscript image into an electrical signal and picturizes it based on the control data of CPU323. AF (autofocus) actuation circuit 316 carries out actuation control of the 6th motor m6 for driving a lens-barrel 44 based on the control data of CPU323, and carrying out the automatic regulation of the focus of a condenser lens 45. The reflective mirror actuation circuit 317 carries out actuation control of the 4th motor m4 for driving the reflective mirror 48 based on the control data of CPU323. The filter actuation circuit 318 carries out actuation control of the 5th motor m5 for driving a filter 41 based on the control data of

CPU323.

[0112] The indicator actuation circuit 319 is based on the control data of CPU323, and turns on or blinks the APS indicator 15, the film indicator 16, and the manuscript indicator 17.

[0113] In addition, reversal control is possible for each above motor, and it is also possible to convey a film to hard flow, for example, it is also possible to read an image during conveyance to the inversion direction. For example, a PURISU can may be performed by the positive direction conveyance, and the Maine scan may be performed by hard flow conveyance.

[0114] [Explanation of the reading control by scanner equipment], next reading control [equipment / 1000 / of the scanner equipment of the operation gestalt of this invention equipped with the above configuration / server] are explained with reference to the flow chart of drawing 20 . Drawing 20 is a flow chart which shows the image input control from scanner equipment 1. In addition, the following explanation carries out reading control of 135 films to an example.

[0115] When it is going to input an image, from a menu screen, it is made to shift to an image input screen, and if needed, an alter operation screen (dialog) is made to shift from an image input screen, and the display screen of a display 1800 is performed. And when editing the inputted image, it will edit by the edit display. For this reason, a desired source icon is chosen among the selection icons (icon showing the source which was mentioned above and which can be read) of the image source which chooses scanner equipment 1 as the input source, and is continuously displayed by the image input screen at step S1. A 135 film icon will be chosen in this example.

[0116] The example of the alter operation screen at the time of choosing a 135 film icon is shown in drawing 21 . In drawing 1 , the upper left section is an input window and is a window which displays the condition of the filmstrip under present scan. The lower right is an image window, whenever it ends the scan of one filmstrip, it can read, and an additional indication of the *** image is given one by one in this window at entry sequence. In addition, assignment of the panorama coma assignment later mentioned to the image of this window, reversal, etc. is possible.

[0117] Moreover, an upper right window is a setting-out window, and sets up before a PURISU can. The center of right-hand side is a carbon button of operation.

[0118] The operator of a scanner cannot do reading, or it stops reading processing, in not becoming the image wished to have although read, and he reads at step S2, reads by initiation, checks the film which is an object, and holds a consultation to the user who brought the reading object etc.

[0119] When it is judged with the check of media that reading is possible, it sets to the reading section which the film mentioned above. And from the setting-out window shown in drawing 21 , a color, monochrome, or a film reads setting out of a negative film or a positive film, and if needed at continuing step S3, and reading performs assignment of whenever Kamasu]. In addition, automatically, this resolution setting out is actually controlled for a line crack and the need of operating it so that there is nothing.

[0120] Then, the PURISU can actuation which clicked and mentioned above the PURISU can of a carbon button of operation by step S4 is made to start. At a PURISU can, all images are read with a low resolution, conveying to the forward direction of a film. Consequently, it is possible to gather scan speed, for example, the reading time amount for one piece can be suppressed at about 0.5 seconds. With the Maine scan incidentally mentioned later, the scanning time amount for part 2.5 seconds for one piece is required for reading resolution at reading by the 4 bases for reading resolution for part 4 seconds for one piece in reading by the 16 bases.

[0121] The image read by the PURISU can is sent to the scanner control section 1110. This image is sent per structure top train of CCD of the scanner equipment 1 mentioned above. For this reason, in the scanner control section 1110, it outputs to the image input section 1120 per line one by one from the top line in the phase which had complete set of data of a train unit. That is, the output format of an image will be outputted in the condition of having been changed 90 degrees. This low resolution data is data broken into a display with mourning, and this is because outputting per line to a display is optimal.

[0122] This data is sent to the image subsystem 1130 through the image input section 1120, and is displayed at a time on an input window six pieces one by one. For this reason, an operator checks the display result of this input window, and a PURISU can result judges whether it is the right. As a result of decision, when a PURISU can result is not right, it progresses to step S7, and it judges whether it is the decision error of the boundary of a film. In not being the decision error of the boundary of a film, a film is again reset at step S8, and it returns to step S4.

[0123] On the other hand, in being the decision error of the boundary of a film at step S7, it progresses to step S9, and the positioning dialog shown in drawing 22 is displayed, and positioning is performed. In this example, although the scanner has detected the photography frame of a film once, when nothing is reflected to the film, or when there is a film transport mistake by the side of a camera, the decision error of the boundary of a film may occur. For this reason, it sets up so that a scanning starting position may be set up with the adjustment carbon button of the lower part of the screen of drawing 22 in such a case and a borderline may be in agreement. And a PURISU can is performed again, the Maine scan is performed after that, and it progresses to step S23. Control in the meantime is the same in the normal processing mentioned later.

[0124] On the other hand, a PURISU can result progresses to a right case at step S6 at step S21, an input window is checked, and a piece required for sequential processing is chosen. It is the piece as which the piece shown by the white frame by drawing 21 was chosen. And termination of selection of this piece directs the Maine scan from a carbon button of operation. The Maine scan which this shows to step S22 is performed, and loading of the selection image in the high resolution which becomes settled by the document is performed. In addition, since it is reading by high resolution at the time of the Maine scan, it reads as compared with the time of a PURISU can, and speed becomes a low speed, but when there is a piece which is not read at the time of the Maine scan, the bearer rate of a film is raised in this example to the same bearer rate as the time of a PURISU can. And when it becomes the piece which should read a degree, it is controlling to become the reading speed at the time of the usual Maine scan.

[0125] Thus, JPEG compression is carried out by CPU323 of scanner equipment 1, and the read high resolution data is sent to the scanner control section 1110. It is sent to an image subsystem through the image input section 1120 after that, and is stored with the low resolution data corresponding to the image pool 1150. And an additional indication of the low resolution data is given in the image window shown in drawing 21 of a display 1800.

[0126] Next, when it judges whether there is any following film at step S23 and there is the following film, an operator inserts the following film at step S24, and returns to step S4.

[0127] On the other hand, it judges whether when there is no following film, it progresses to step S25 from step S23, an image window is checked again, and there is any unnecessary piece, when there is an unnecessary piece, it deletes, and in being a panorama piece, it deals with setting that up etc. And a final check is performed at step S26, and image input process with the scanner concerned is ended.

[0128] In addition, in the example of a gestalt of operation of this invention, although the Maine scan is performed after termination of a PURISU can, it is possible to change scanning conditions based on the result of a PURISU can before the Maine scan activation, for example, it reads and various amendments of the black level amendment to ** data, the amount of gamma amendments, the amount of masking, etc. are possible. And although a high resolution entry of data is performed according to this condition, this condition is reflected also to the low resolution data which carried out the PURISU candy input previously. That is, it is possible to choose for every piece with the Maine scan, and it is possible to set up scanning conditions for every piece. However, conditioning for such every piece is not carried out at the time of a PURISU can, but this processing is performed for this condition in the image input section 1120 in delivery and the image input section 1120 through the scanner control section 1110.

[0129] In addition, although the above explanation explained reading of 135 films as an example, it can be easily read by the scanner actuation which was mentioned above also in the case of other record media.

[0130] As explained above, since the low resolution data for a display is read at high speed at the time of a PURISU can and the high resolution data for printouts is read at the time of the Maine scan, according to the example of a gestalt of operation of this invention, the data of a short time and two or more request resolution by easy control can be obtained. And since the scan speed in the portion of the piece is gathered when there is a piece which is not read at the time of the Maine scan, reading time amount of high resolution data is also made with the minimum thing.

[0131] Moreover, the reading conditions at the time of the Maine scan can be reflected also in the low resolution data read previously.

[0132]

[Other operation gestalten] In addition, even if it applies this invention to the system which consists of two or more devices (for example, a host computer, an interface device, a reader, a printer, etc.), it may be applied to the equipments (for example, a copying machine, facsimile apparatus, etc.) which consist of one device.

[0133] Moreover, it cannot be overemphasized by the object of this invention supplying the storage which recorded the program code of the software which realizes the function of the operation gestalt mentioned above to a system or equipment, and carrying out read-out activation of the program code with which the computer (or CPU and MPU) of the system or equipment was stored in the storage that it is attained.

[0134] In this case, the function of the operation gestalt which the program code itself read from the storage mentioned above will be realized, and the storage which memorized that program code will constitute this invention.

[0135] As a storage for supplying a program code, a floppy disk, a hard disk, an optical disk, a magneto-optic disk, CD-ROM, CD-R, a magnetic tape, the memory card of a non-volatile, ROM, etc. can be used, for example.

[0136] Moreover, it cannot be overemphasized that it is contained also when the function of the operation gestalt which performed a part or all of processing that OS (operating system) which is working on a computer is actual, based on directions of the program code, and the function of the operation gestalt mentioned above by performing the program code which the computer read is not only realized, but was mentioned above by the processing is realized.

[0137] Furthermore, after the program code read from a storage is written in the memory with which the functional expansion unit connected to the functional add-in board inserted in the computer or a computer is equipped, it cannot be overemphasized that it is contained also when the function of the operation gestalt which performed a part or all of processing that CPU with which the functional add-in board and functional expansion unit are equipped based on directions of the program code is actual, and mentioned above by the processing is realized.

[0138]

[Effect of the Invention] As mentioned above, as explained, according to this invention, the low resolution data suitable for a display and the high resolution data suitable for printouts can be read in the small amount of scans, and reading by the high speed becomes possible. Moreover, according to this invention, there is no definition in the record medium which reads processing information, and, in all cases, it can respond.

[0139]

[Translation done.]

NOTICES

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is drawing showing the system configuration of the image processing system in the example of a gestalt of implementation of 1 invention concerning *****.

[Drawing 2] It is the whole example block diagram of an operation gestalt of this invention.

[Drawing 3] It is the appearance perspective diagram of the scanner equipment of the example of an operation gestalt of this invention.

[Drawing 4] It is the appearance perspective diagram of the example of an activity of the scanner equipment of the example of an operation gestalt of this invention, and is the appearance perspective diagram in which (a) shows the busy condition of the continuation film unit 100, and (b) shows the busy condition of the slide film unit 200.

[Drawing 5] It is the appearance perspective diagram of each read station of built-in to the scanner equipment of the example of an operation gestalt of this invention.

[Drawing 6] It is an appearance perspective diagram for explanation of drawing 4 of operation.

[Drawing 7] It is the cross section having fractured and shown the important section of the film read station of the example of an operation gestalt of this invention.

[Drawing 8] It is the cross section having fractured and shown the important section of the film read station of the example of an operation gestalt of this invention.

[Drawing 9] It is the front view of the continuation film unit 100 of the example of an operation gestalt of this invention.

[Drawing 10] It is a plan after wearing of the continuation film unit 100 of the example of an operation gestalt of this invention.

[Drawing 11] It is the plan of the drawing condition of the continuation film unit 100 of the example of an operation gestalt of this invention.

[Drawing 12] It is the mimetic diagram of the film read station of the example of an operation gestalt of this invention.

[Drawing 13] It is A-A view drawing of drawing 12 of the example of an operation gestalt of this invention.

[Drawing 14] It is B-B view drawing of drawing 12 of the example of an operation gestalt of this invention.

[Drawing 15] It is the rear view seen with the film read station and the slide film unit 200 of the example of an operation gestalt of this invention.

[Drawing 16] It is the rear view seen with the film read station and the continuation film unit 100 of the example of an operation gestalt of this invention.

[Drawing 17] It is the appearance perspective diagram seen with the film read station and Film F of the example of an operation gestalt of this invention.

[Drawing 18] It is explanatory drawing of the film read station of the example of an operation gestalt of this invention of operation.

[Drawing 19] It is the block diagram showing the configuration of the control circuit of the scanner equipment of the example of an operation gestalt of this invention.

[Drawing 20] It is the flow chart which shows reading control of the example of an operation gestalt of this invention.

[Drawing 21] ***** which shows the example of a display of the image actuation screen of the example of an operation gestalt of this invention.

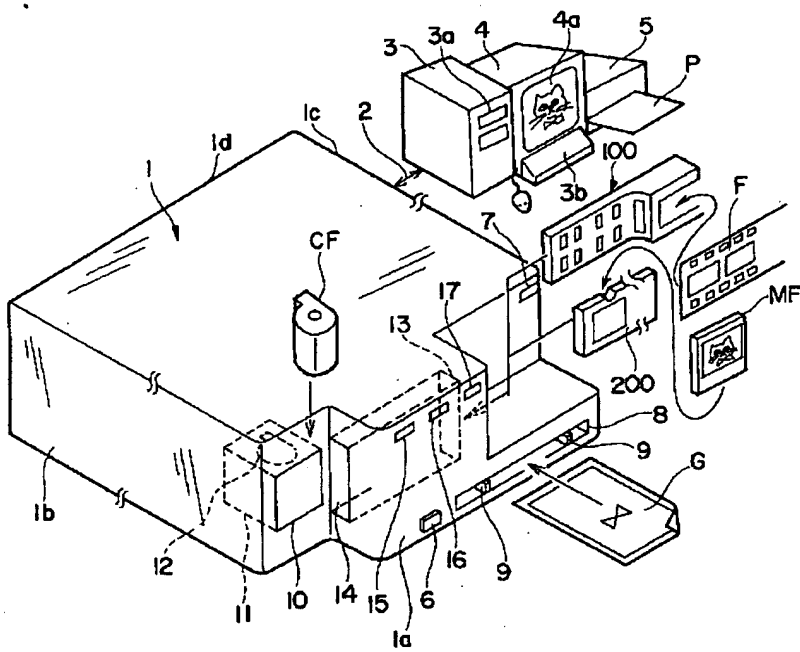
[Drawing 22] ***** which shows the example of a display of the positioning screen of the example of an operation gestalt of this invention.

[Description of Notations]

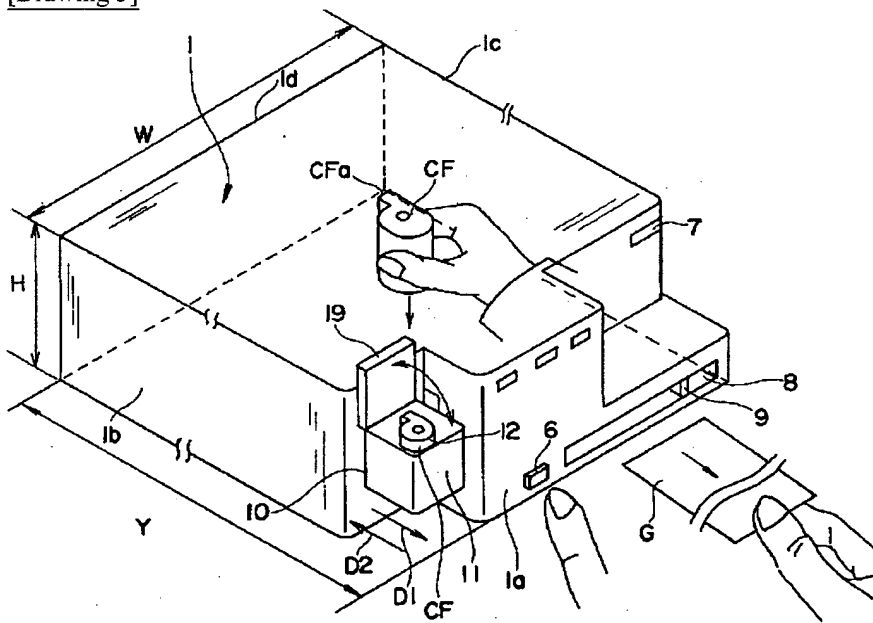
- 1 Scanner Equipment
- 2 Interface Cable
- 6 Ejection Switch
- 7 Power-on Drop
- 8 Manuscript Insertion Exhaust Port (for Reflection Copies)
- 10 Opening
- 11 Applied Part (for APS Films)
- 12 Wearing Hole
- 13 Right Opening
- 14 Left Opening
- 15 Drop (for APS Films)
- 16 Drop (for 135 Films)
- 17 Drop (for Manuscripts)
- 19 Lid
- 20 Reflection Copy Read Station (2nd Conveyance Means)
- 21 Drive Roller

21a elastic section
22 Idle Roller
23 Cold Cathode Tube
24 Reflective Mirror
25 Condenser Lens
26 Line Image Sensors (2nd Image Read Station)
30 Film Read Station (1st Conveyance Means)
31 Base
32 Drive Roller
33 Idle Roller
34 Cold Cathode Tube
35 Black Box
36 Black Box
38 Aperture
39 Opening
40 Optical-Path Translator
41 Filter Translator
42 Filter
43 Endless Screw
44 Camera Cone
45 Condenser Lens
46 Line Image Sensors (the 1st, 3rd Image Read Station)
48 Reflective Mirror
50 Crevice
51 Spring
52 Free Roller
53 Idle Roller
55 Base
58 Lever
59 Reflective Stripe
60 APS Film Read Station (3rd Conveyance Means)
61 Dowel Member
62 Rack
63 Pinion
64 Cold Cathode Tube
65 Clutch
66 Take-up Spool
67 Pinch Roller
68 Capstan Roller
70 Base
100 Continuation Film Unit
200 Slide Film Unit
1000 Server Equipment
2000 Terminal Unit
4000 Template Work Equipment
3000 Printer Equipment
5000 Image *****
1100 Image Control Section
1150 Image Pool
1130 Image Subsystem
1200 Image-Processing Section
1300 Template Control Section
1350 Book Subsystem
1400 Control Section
1500 Printing Control Sections K1-K7 Sensor
m1-m9 Motor
P Record sheet
CF APS film
F 135 films
G Reflection copy
L1-L3 Optical axis

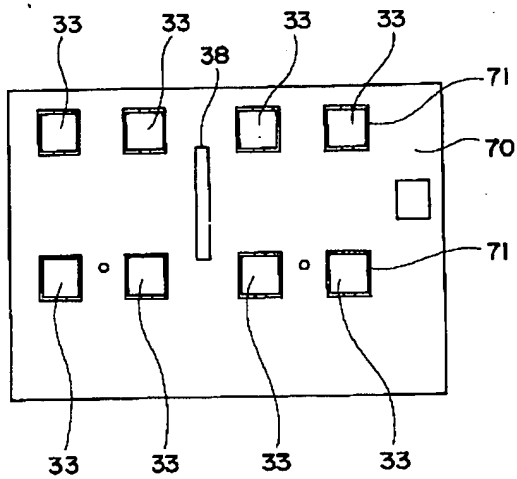
[Translation done.]



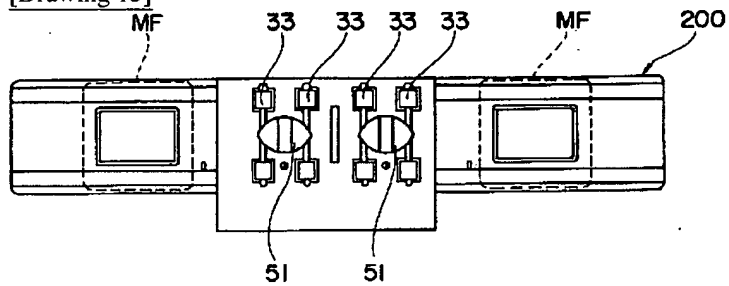
[Drawing 3]



[Drawing 13]

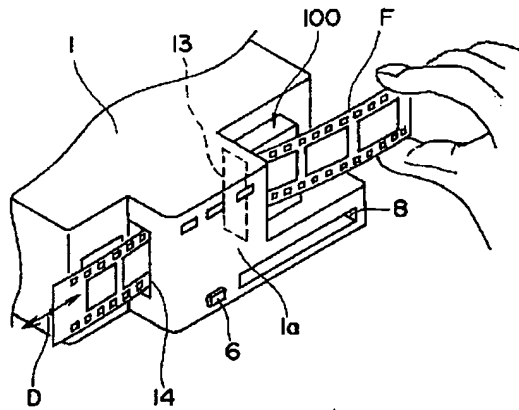


[Drawing 15]

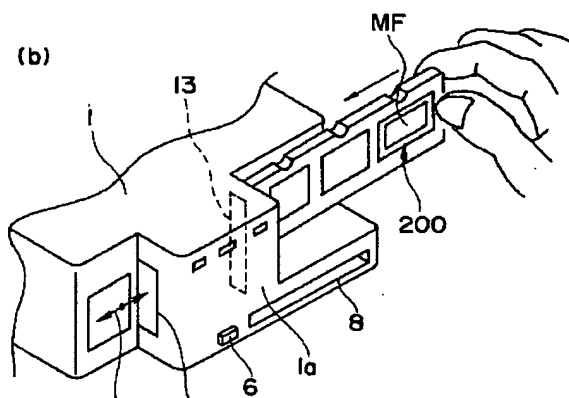


[Drawing 4]

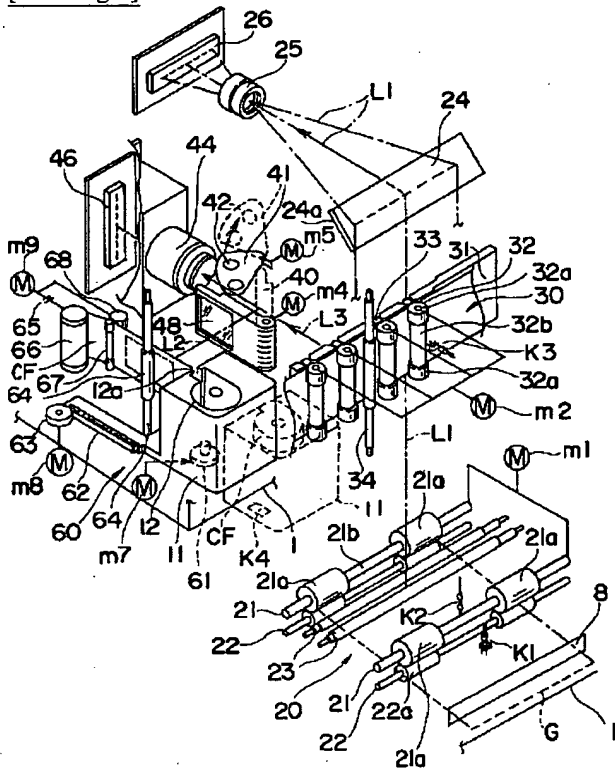
(a)



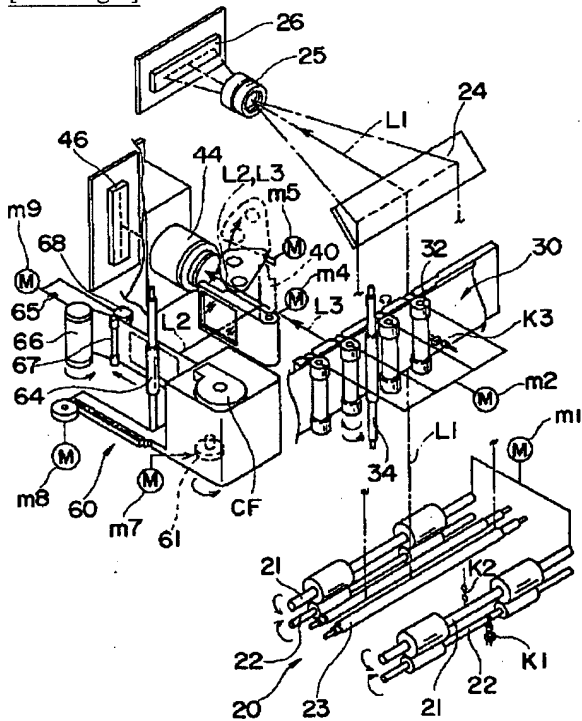
(b)



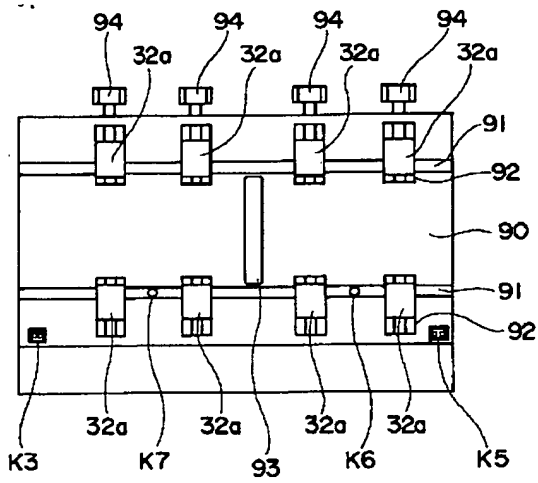
[Drawing 5]



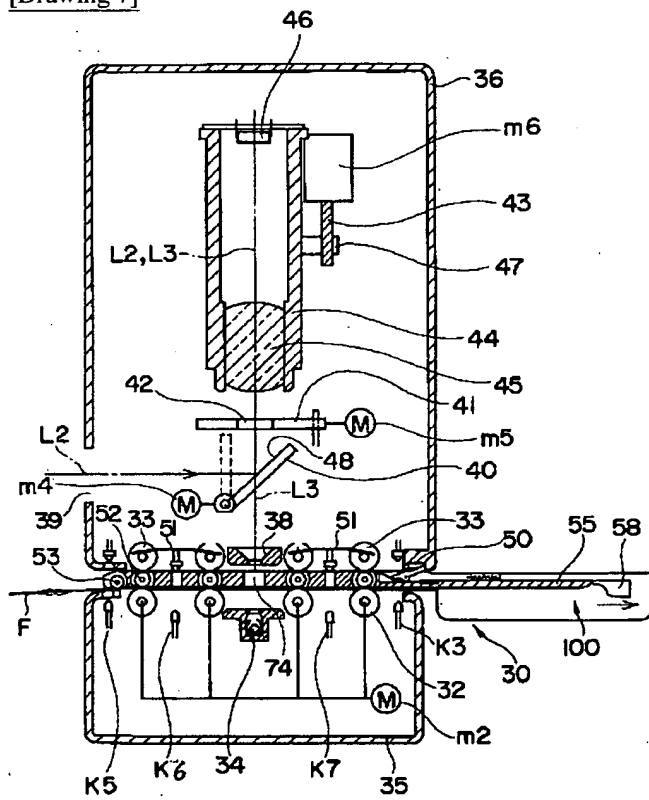
[Drawing 6]



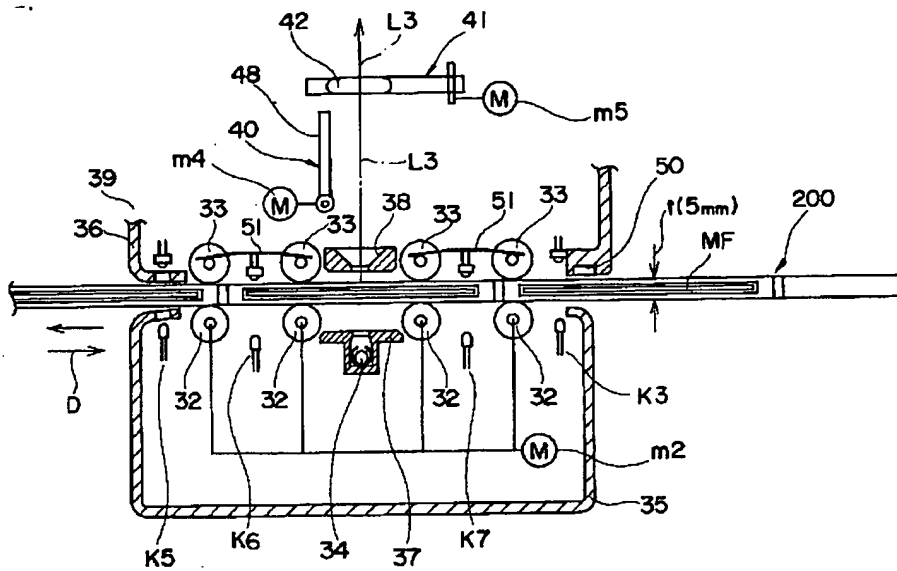
[Drawing 14]



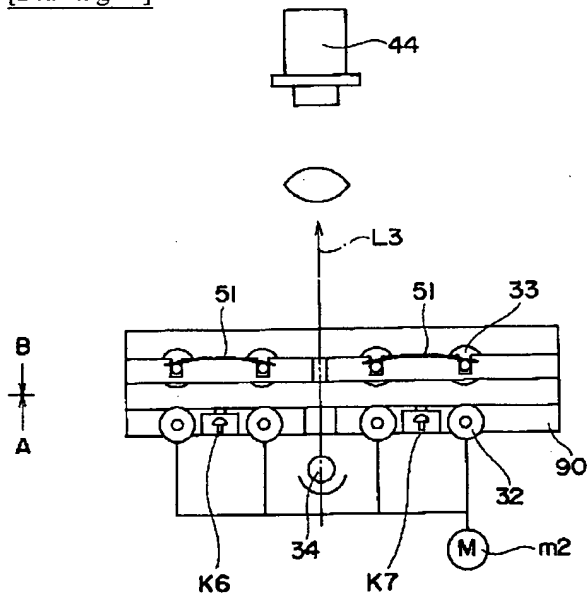
[Drawing 7]



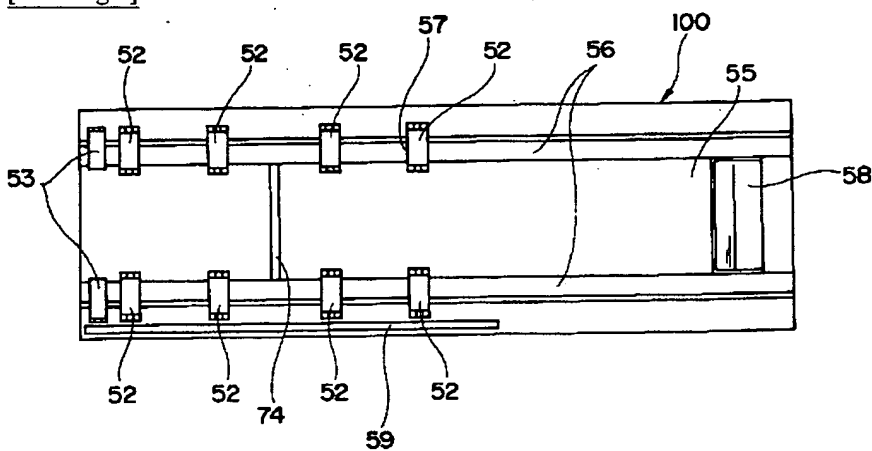
[Drawing 8]



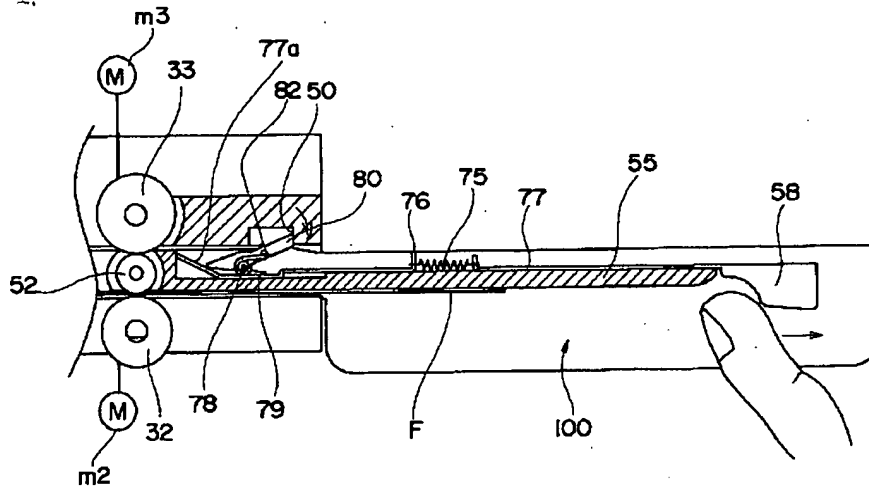
[Drawing 12]



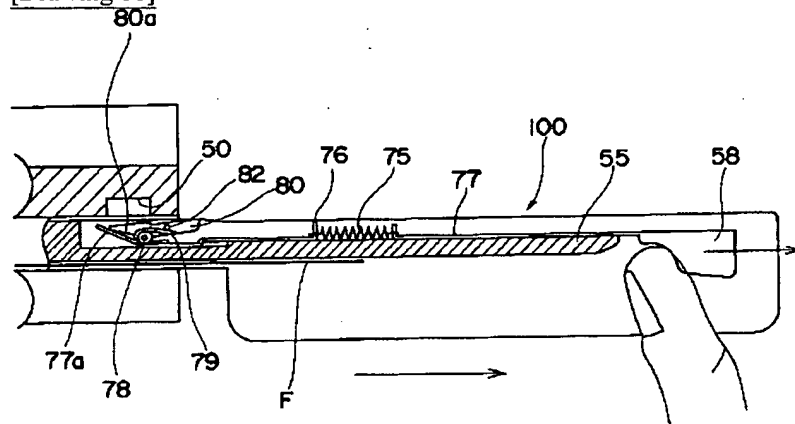
[Drawing 9]



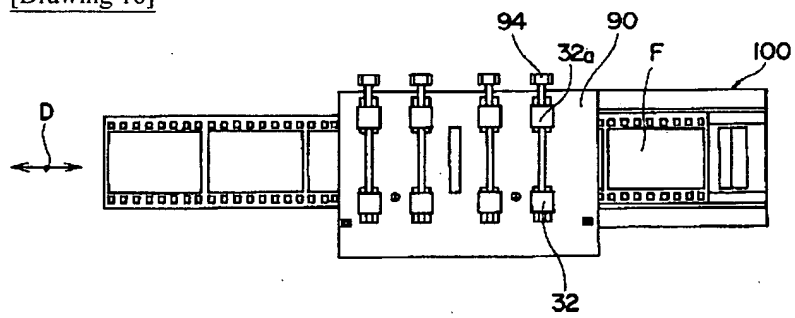
[Drawing 10]



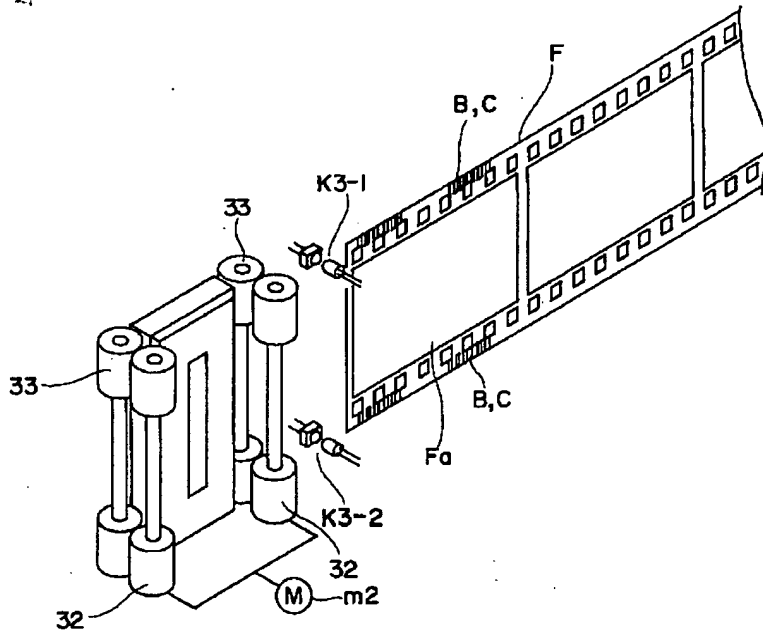
[Drawing 11]
80a



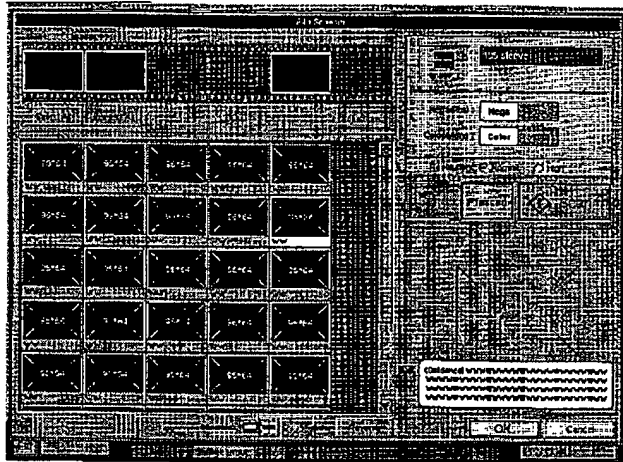
[Drawing 16]



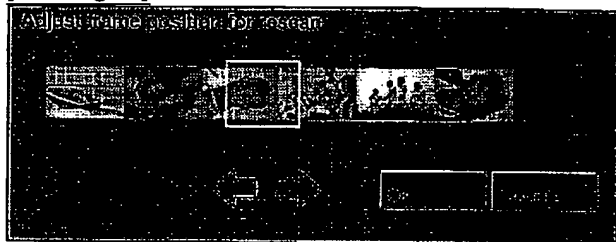
[Drawing 17]



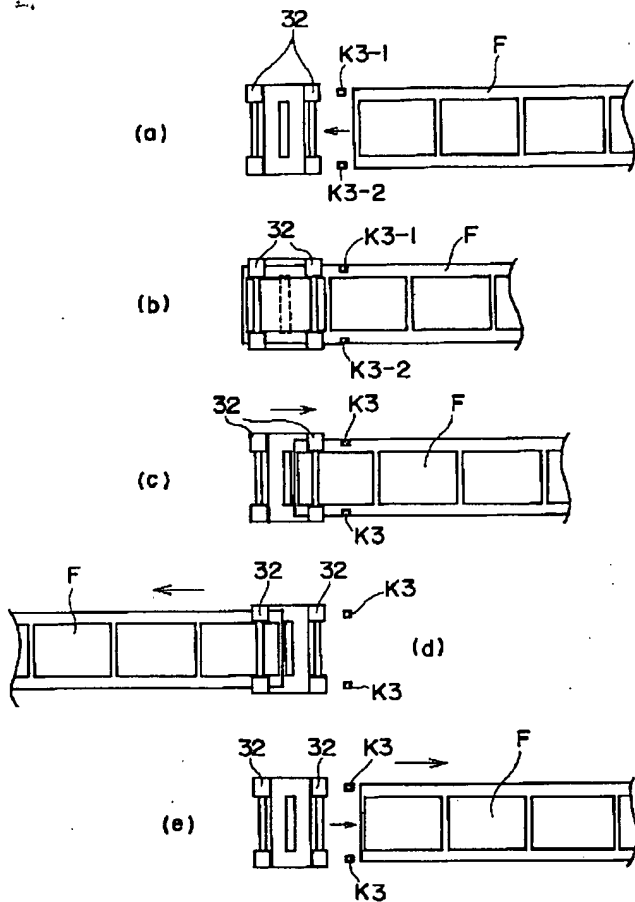
[Drawing 21]



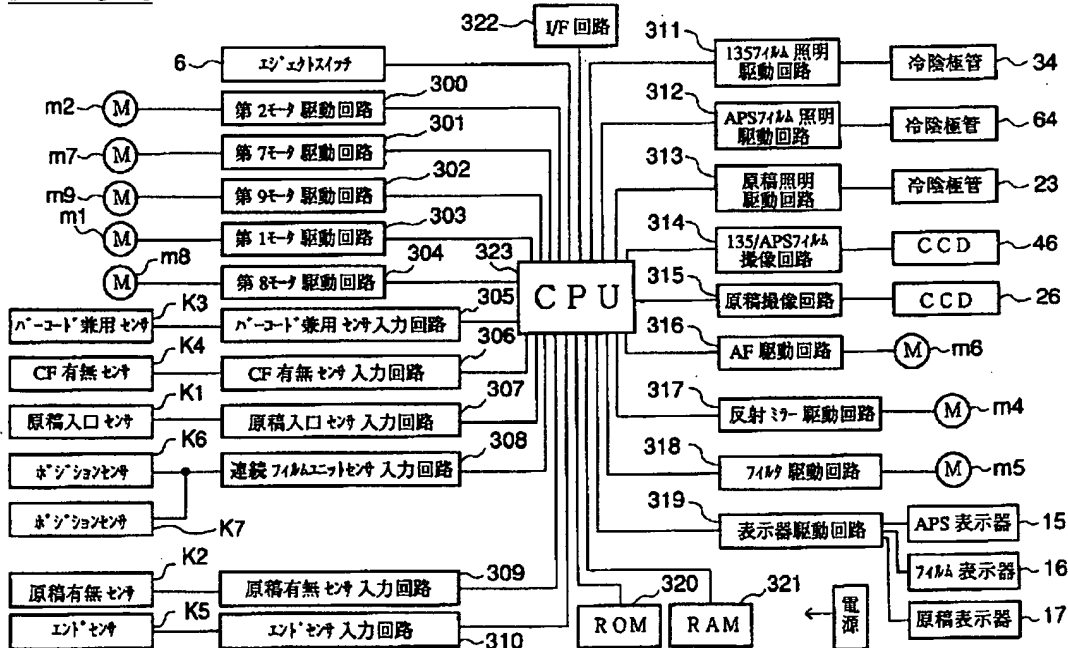
[Drawing 22]



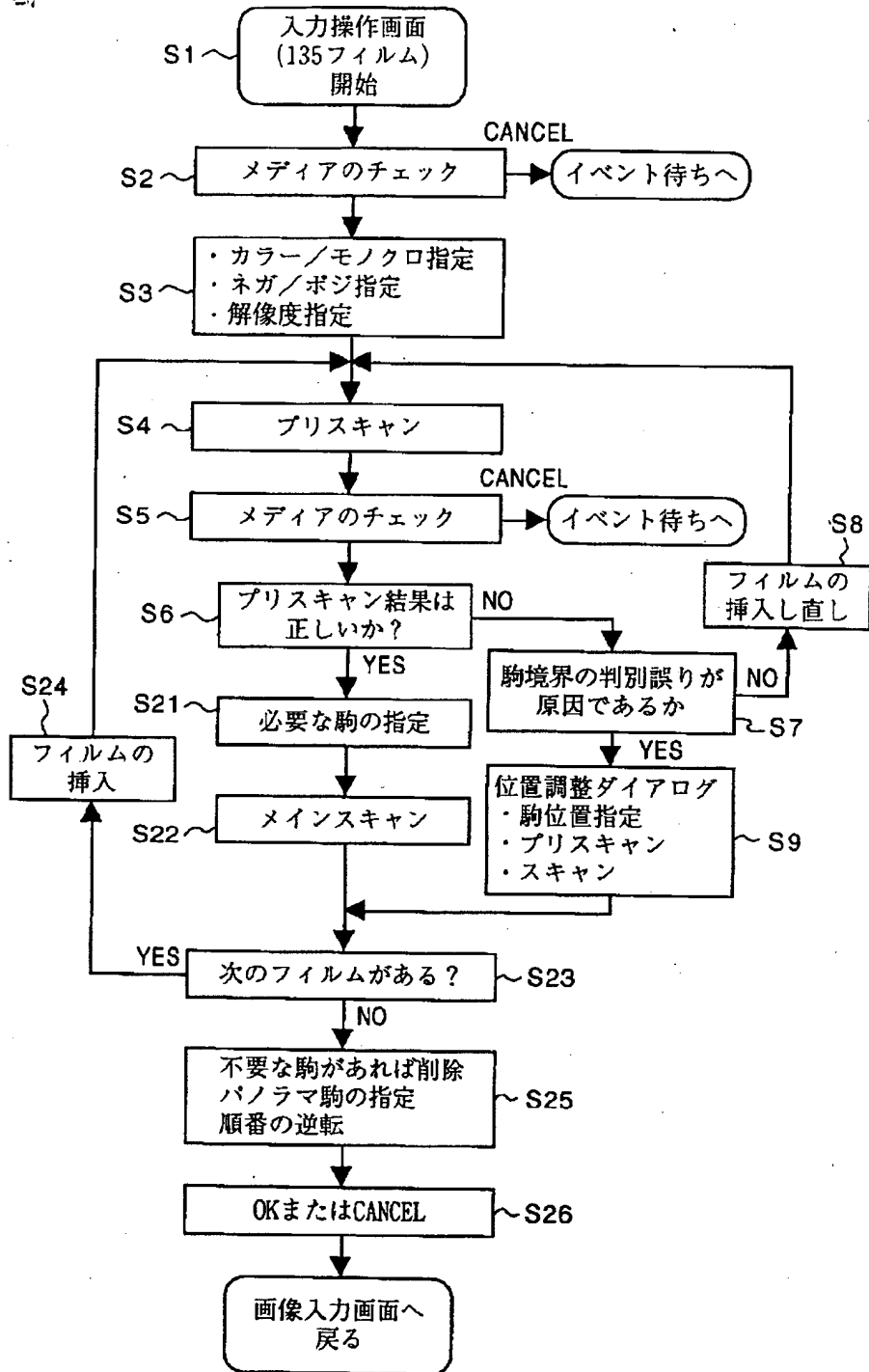
[Drawing 18]



[Drawing 19]



[Drawing 20]



[Translation done.]